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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,203	05/31/2001	Yeong-Kwan Kim	2522-11	1930

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EXAMINER

MALDONADO, JULIO J

ART UNIT PAPER NUMBER

2823

DATE MAILED: 09/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/872,203

Applicant(s)

KIM ET AL.

Examiner

Julio J. Maldonado

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-22 and 24-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4-22,24-39 and 42 is/are allowed.
- 6) ☒ Claim(s) 40 and 41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

1. The non-final rejection as set forth in paper No.4 is withdrawn in response to applicants' amendments.
2. The cancellation of claims 2, 3, and 23 as set forth in paper No.6 is acknowledged.
3. A new rejection is made as set forth in this Office Action.
4. Claims 1, 4-22 and 24-42 are pending in the application.

Allowable Subject Matter

5. The indicated allowability of claims 40 and 41 is withdrawn in view of the newly discovered reference(s) to Raajimakers (U.S. 6,511,539 B1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 40 and 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Raajimakers (U.S. 6,511,539 B1).

Raajimakers (Fig.1) in a related method to form sequential monolayers by an ALD method teaches providing a reactor having a single reaction space; concurrently

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loading the plurality of wafers having a processing surface into the reaction space, wherein the processing surfaces of the wafers face in substantially the same direction; introducing a first reactant into the reaction space, wherein a portion of the first reactant is chemically adsorbed on the processing surface of each of the plurality of wafers; removing a non-chemically adsorbed portion of the first reactant from the reaction space; introducing a second reactant into the reaction space, wherein a portion of the second reactant is chemically adsorbed on the processing surface of each of the plurality of wafers; and removing a non-chemically adsorbed portion of the second reactant from the reaction space (column 1, line 13 – column 10, line 60).

Allowable Subject Matter

8. Claims 1, 4-22 and 24-42 are allowed.
9. The following is a statement of reasons for the indication of allowable subject matter: Raajimakers to U.S. 6,511,539 B1 teaches in Fig.1 and related text a method to form sequential monolayers by an ALD method teaches providing a reactor having a single reaction space; concurrently loading the plurality of wafers having a processing surface into the reaction space, wherein the processing surfaces of the wafers face in substantially the same direction; introducing a first reactant into the reaction space, wherein a portion of the first reactant is chemically adsorbed on the processing surface of each of the plurality of wafers; removing a non-chemically adsorbed portion of the first reactant from the reaction space; introducing a second reactant into the reaction space, wherein a portion of the second reactant is chemically adsorbed on the processing surface of each of the plurality of wafers; and removing a non-chemically

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adsorbed portion of the second reactant from the reaction space (column 1, line 13 – column 10, line 60).


However, Raajimakers neither teaches nor suggests introducing the gas containing reactants at a first pressure and said diluting is performed to a second pressure, and where the second pressure is greater than the first pressure.


Conclusion

10. Papers related to this application may be submitted directly to Art Unit 2823 by facsimile transmission. Papers should be faxed to Art Unit 2823 via the Art Unit 2823 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2823 Fax Center number is **(703) 305-3432**. The Art Unit 2823 Fax Center is to be used only for papers related to Art Unit 2823 applications.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Julio J. Maldonado** at **(703) 306-0098** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via julio.maldonado@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Group 2800 Receptionist** at **(703) 308-0956**.


JMR
9/5/03


George Fourson
Primary Examiner